Road & Bridge Design Publications

Monthly Update – May 2015

Revisions for the month of **May** are listed and displayed below. The special detail index from April will remain in effect. E-mail questions related to the road changes to MDOT-Road-Design-Standards@michigan.gov. E-mail Bridge related questions to MDOT-Bridge-Design-Standards@michigan.gov.

Road Design Manual

11.02.03B: Special Provisions-Title Block, Headers, and Footers: The identification code naming convention was revised. Instead of the last four digits being enclosed in parenthesis, they will be separated from the rest of the code by a dash.

11.02.05: Special Provision Naming Convention: The identification code naming convention change mentioned above was revised. Also, Microsoft Word 2013 (.docx) will be used to create special provisions.

11.04.01: Organizing the Special Provision: A note regarding the use of bullets was added to the information on outlining convention.

11.04.07: Sample Special Provision: The identification code naming convention change mentioned above was revised in this section.

11.06.01: Special Provision Approval Procedure: Information regarding the submission of unique special provisions for "Other Department Costs, Incentives, Lane Rental, and Calendar Days of Contract Time for Opening to Traffic" was added. A reference to Microsoft Word 2010 was revised to 2013.

12.03.06: Bicycle Facilities: The term "Enhancement Program" was revised to "Transportation Alternatives Program".

14.41: Participation Agreements: The term "Enhancement Projects" was revised to "Transportation Alternatives Program Projects".

Bridge Design Manual

7.01.04 C&E, 8.02 A2 & 8.05 A2 (LRFD Only): Combined sections 7.01.04 C & E. Updated maintenance vehicle loading requirements. Updated deflection limits in 8.02 A2 & 8.05 A2.

Road & Bridge Design Publications

Monthly Update – May 2015

Updates to MDOT Cell Library, Bridge Auto Draw Program, etc., may be required in tandem with some of this month's updates. Until such updates to automated tools can be made, it is the designer's/detailer's responsibility to manually incorporate any necessary revisions to notes and plan details to reflect these revisions.

11.02.03 (revised 5-26-2015)

Page Layout

A. Document Format

The following guidelines must be followed when developing a special provision to give a uniform appearance to proposals. Special provisions submitted for review and approval that do not follow the approved document format will be returned to the submitter for reformatting before the approval process begins.

1. Margins – Use 1 inch margins.

2. Fonts - All headers use Arial 12 point, special provision text uses Arial 11 point and tables and figures use Arial 10 point.

3. Tabs and Indents - Use 0.25 inch intervals. Automated numbering or labeling of subsections must **not** be used.

4. Bold Face - The use of bold face font is limited to the special provision title, section labels and names, table and figure titles and pay items.

11.02.03 (continued)

B. Title Block, Headers, and Footers

1. Document Headers/Footers - On the first page the document header must contain the Identification Code (see below). Right justify the Identification Code.

   On any remaining pages the document headers contains the secondary header.

   All headers and footers should begin 0.5 inches from the edge of the page.

2. Identification Code - The Identification Code naming convention shown below must be applied to all special provisions, with the exception of Special Provisions for Maintaining Traffic. When using a special provision that has been approved and assigned an Identification Code, the file should **not** be revised unless the special provision is resubmitted for re-approval**.**

   The Identification Code must be defined by the Project Manager prior to submittal for approval, to the extent possible. However, the last four digits after the hyphen are assigned by Specifications Engineer upon approval. A sample Identification code is as follows:

   12DS819-A055

   Digits 1 and 2 designate the year of the Standard Specifications of Construction book that the special provision has been written against.

11.02.03 (continued)

Page Layout

Letters 3 and 4 designate the code for the type or origin for the special provision. Type codes are presented on the next page.

Digits 5, 6 and 7 designate the section of the Standard Specifications for Construction book the work in the special provision covers. If it can be attributed to more than one section use the one that is most closely related to the work in the special provision.

After the hyphen is a four digit alpha-numeric code assigned by the Specifications Engineer to identify the special provision as a unique document for tracking purposes.

The first digit is an Arabic letter followed by the number 005 for the first special provision by that area and increasing by 5 for each successive special provision approved for that area. These will be assigned as the Specifications Engineer approves the special provision.

11.02.03 (continued)

3. Title Block - The Department name and the special provision title are included in the Title Block at the top of the first page of document, but not actually in the document header as defined by Microsoft Word. Center this information on the page.

   Make the special provision title short enough to fit on one line if possible and provide a clear idea of the content and the subsection of the standard specifications being altered. If possible, make the title match the pay item affected or established by the special provision in the title. Do not use any abbreviations in the title.

4. Approval Header – Locate below the Title Block only on the first page. Includes the source code, page number, and approval code.

5. Page Numbers - The page number must appear at the center of the page in the approval header on the first page. The total number of pages in the special provision includes any graphics, appendices or forms which are part of the document. The word “Page” should not be included when setting up page numbers.

11.02.03 (continued)

Page Layout

11. Examples - The following are examples of what the first page of a special provision should look like and what the second page should like when the proper information has been placed in the correct location as they are submitted for review.

First page example:

12DS404-
Identification Code

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
UNDERDRAIN AND UNDERDRAIN OUTLET VIDEO

(Location:Author)	1 of #	APPR:XXX:YYY:00-00-00
Source Code	*Page*	*Approval Code*

Second page example:

12DS404-
Identification Code

(Location:Author)	2 of #	00-00-00
Source Code	*Page*	*Approval Date*

11.02.05 (revised 5-26-2015)

Special Provision Naming Convention

The following file naming convention must be used for all unique special provisions submitted for review. Special provisions not using the file naming convention will be returned to the Project Manager for correction and resubmittal.

The only exception to this naming convention will be for template and recommended special provisions since they use a separate a naming convention that is similar, but includes additional information.

Each file name must begin with the exact title of the special provision in Title Case (Initial capitalization and lower case for prepositions, articles, and conjunctions) followed by a dash, and then the Identification Code (less the four digits after the hyphen).

The Specifications Engineer will enter the remaining four digits after the hyphen, but the Project Manager should enter the first seven digits.

For example: if the special provision is titled "Water Main, Ductile Iron, __ Inch, Trench Detail __, Special" and is being turned in by the municipal utilities design unit, the special provision file name would be "Water Main, Ductile Iron, __ Inch, Trench Detail __, Special-12DS823-.docx".

11.02.05 (continued)

Note that abbreviations are not to be used in special provision titles, even the standard abbreviations that we use in the pay items cannot be used when developing the special provision title.

If a special provision is returned unapproved for use after being submitted for review, the filename must be revised to include "rev1" or as appropriate "rev2", etc. The following is an example of a special provision filename for a document that was resubmitted. The revised file name would be "Water Main, Ductile Iron, __ Inch, Trench Detail __, Special-12DS823-rev1.docx".

11.03.05

Citing Specifications and Standards

MDOT Standard Specifications for Construction - Do not capitalize “section” and “subsection”, when used in references to the Standard Specifications for Construction book.

MDOT Standard Plans and Special Details - To ensure that the most current version is applied, do not include the letter designation of standard plans. For example, refer to Standard Plan R-128 Series. The term “series” includes any subsequent interim special details for the named standard. All other special details not in the standard plan series are included in and considered part of the project plans.

AASHTO, ASTM and Michigan Test Methods - If it is not covered by section 101.02, the full title of the specification should be listed.

Michigan Public Acts - Cite by the <YEAR>PA<Act No.> followed by section/part number and name if necessary. Example: 1994 PA 451, Part 91, Soil Erosion and Sedimentation Control.

Code of Federal Regulations - Cite using the title, part and section number. Example: 23 CFR 623.1 refers to title 23, part 623, section 1.

Italics - Use italics for names of publications other than MDOT's standard specifications. For example Standard Specifications for Construction is not shown in italics but *AWS Bridge Welding Code* is italicized.

11.04

ORGANIZING THE SPECIAL PROVISION

11.04.01 (revised 5-26-2015)

Four-Part Document Outline

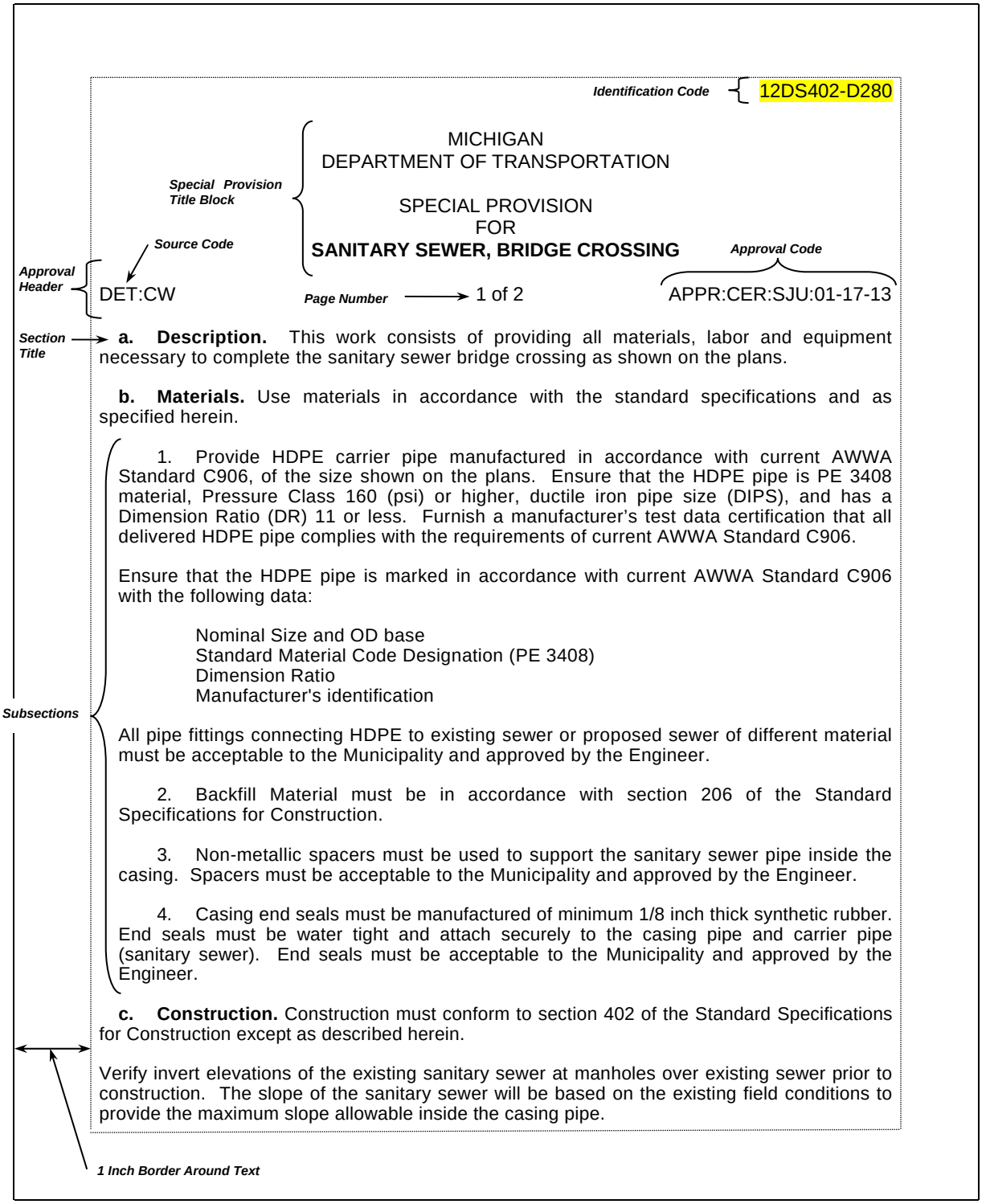
Use the standard four-part outline to establish a uniform approach to providing needed information, describing the work to be performed and identifying the responsibilities of the Contractor and the Department. Provide an organized logical progression of instructions. Each section should progress from general administrative information to specific technical instructions.

Divide the subsections for clarity using the outlining convention shown below. Only use bullets as shown below or when listing a group of items, as included in a plan submittal or similar listing.

a. Description.
b. Materials.
c. Construction.
1. Arabic number followed by a period
   A. Uppercase letter followed by a period
      (1) Arabic number in parentheses - no period
         (a) Lowercase letter in parentheses - no period
            (i) Lowercase Roman numeral in parentheses - no period
               1) Arabic number with single parentheses - no period
                  a) Lowercase letter with single parentheses - no period
                     - Bullet - solid dot only

11.04.07 (revised 5-26-2015)

Sample Special Provision



11.04.07 (continued)

Sample Special Provision

Secondary Header

Set spacers at intermediate intervals according to manufacturer's specifications and recommendations. Note that the spacers will be different sizes to account for the opposing slope of the casing pipe. Additionally, spacers must be sized to account for the deflection of the steel casing, which is estimated to be approximately 1-inch at the midpoint of the casing.

Install pipe inside the casing pipe as shown on the plans. Secure the ends of the casing pipe to the exterior portion of the sanitary sewer using end seals.

Maintain the flow of the existing sanitary sewer system at all times during the removal of the existing sanitary sewer and the construction of the new sanitary sewer and sanitary manholes by bypass pumping the existing sanitary sewer. Upon successful testing of the new sanitary sewer, divert the flow into the new sanitary sewer.

Perform testing and inspection in accordance with the Special Provision for Sanitary Sewer.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
Sanitary Sewer, Bridge Crossing	Foot

Sanitary Sewer, Bridge Crossing will be measured in place along the centerline of the pipe, from edge of casing to edge of casing. Payment includes all materials (including spacers and end seals), excavation and backfill (utilizing necessary means and methods to maintain trench slopes), connection of the entering sewer at the upstream casing side and exiting sewer at the downstream casing, and all testing and inspection in accordance with the Special Provision for Sanitary Sewer.

Steel Casing pipe will be paid for separately according to section 707 of the Standard Specifications for Construction (refer to bridge plans).

11.06

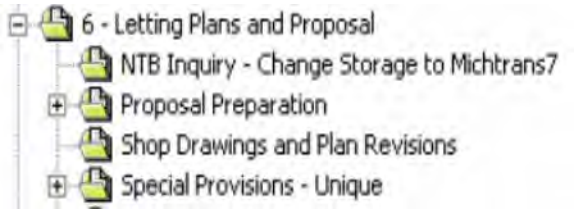
SPECIAL PROVISION APPROVAL PROCEDURE

11.06.01 (revised 5-26-2015)

Overview

All unique special provisions, except those listed as being exempt previously in Section 11.02.02A, that are part of the proposal must have approval of the Specifications Engineer. The Project Manager is required to submit all unique special provisions, even those written by consultants, to the Specifications Engineer at least 6 weeks prior to the plan completion date. Drafts of unique special provisions must be available for review and discussion at the Plan Review meeting.

The approval process is electronic and uses ProjectWise to route files, reviewers' comments and approvals. special provisions must be in Microsoft Word format and must be located in ProjectWise in the "Special Provisions - Unique" folder under the "6-Letting Plans and Proposal" folder for the project it applies to. For more details or assistance with using ProjectWise, contact appropriate support staff for your office.



An overview of the approval procedure is shown on the next page.

The Specifications Engineer will return special provisions not meeting the defined voice, outline and format. Returned special provisions will be sent to the Project Manager for revisions. These documents will need to be resubmitted before the review and approval process can begin. See Section 11.02.05 for how to rename a special provision file name when it is resubmitted.

11.06.01 (continued)

Project Managers are encouraged to use special provisions available on the Previously Approved Special Provisions web page whenever possible. If any changes are made to the approved document, it must be saved with a new filename. When submitting a revised (previously approved) special provision the track changes features of Microsoft Word must be used to delineate the changes made to the original document. This will substantially expedite the approval process.

If there are special circumstances such as tight project deadlines, or related special provisions that should be reviewed together, provide this information as a comment within the Word document when submitting the documents for review. Be sure to include the name of the individual that has provided preliminary reviews if it is appropriate to have this person assigned to review the final special provision.

Unique special provisions must be approved prior to advertisement. When a project is submitted to the Specifications and Estimates Unit for advertisement with unapproved unique special provisions, the Project Manager must complete Form 2908 Special Provision - Exception Risk Analysis, including approval by the appropriate region engineer. Although minimal use is encouraged, this form does allow for exceptions for multiple unique special provisions. Unique special provisions for Liquidated Damages for Other Department Costs, Incentives, Lane Rental, and Calendar Days of Contract Time for Opening to Traffic are not eligible for the use of Form 2908 Special Provision - Exception Risk Analysis.

Unique special provisions for Liquidated Damages for Other Department Costs, Incentives, Lane Rental, and Calendar Days of Contract Time for Opening to Traffic also require the submittal of the final version of the Progress Clause and the Special Provision for Maintaining Traffic to be used for information required to approve the listed special provisions.

11.06.01 (continued)

Overview

All Frequently Used Special Provisions (FUSPs) and all non-job related special provisions must be approved prior to being placed in a proposal just like all unique special provisions. All FUSPs must meet the requirements contained in Sections 11.02.01A, 11.09.03, and 11.10 as well as the formatting, voice and outlining requirements for unique special provisions. All non-job related special provisions must meet the formatting, voice and outlining requirements for unique special provisions.

All Frequently Used Special Provisions and all non-job related special provisions should be sent by e-mail to the MDOT-DesignFUSP@Michigan.gov mail box. This e-mail should include two attachments for each special provision. The Microsoft Word file using Microsoft Word version 2013 (.docx) and the appropriate MDOT Form (Form 0372 – FUSP Request Form or Form 0373 – Non-Job Related SP Request Form) filled out by the requestor. If this information is not submitted or complete the entire package will be returned without being placed into the review process. Proper justification will be needed for FUSPs to be processed outside the annual review period as specified in Section 11.10.

11.06.01 (continued)

Once a properly completed FUSP request is received it will be placed into ProjectWise where it will be reviewed and approved following the procedure outlined on the next page.

Once a properly completed non-job related special provision request is received it will be placed into ProjectWise where it will be reviewed and approved following the same procedure used to review unique special provisions found on the previous page.

12.03.04

Lump Sum Payments

Act 296 provides that a lump sum payment to the local agency is an alternative to a rehabilitation project. This is usually attractive to the local agency when it desires a major reconstruction, something more than the Department is bound by law to provide. The Bureau of Highways, Office Informational Memorandum (O.I.) "LUMP SUM PAYMENT ON TURNBACKS" will be used to determine the fair and equitable amount of a lump sum payment. The designer's responsibilities are outlined in the O.I.

12.03.05

Right-of-Way

As a general policy, the Department will not acquire additional R.O.W. on turnbacks. If additional R.O.W. is required, it must be obtained by the local agency. There are a couple of exceptions to this rule, however:

A. If in fact it develops that the Department does not own all of the R.O.W. shown as "existing" in the R.O.W. map book, we may acquire, at project cost, that which we assumed was ours, but isn't.

B. Grading permits may be obtained at project cost. Management has applied the restriction that grading permits must be approved by the Chairman of the Turnback Review Committee.

   On completion of the turnback project and transfer of jurisdiction, any transferable interest in the R.O.W. will be conveyed by the Department. Title to excess R.O.W. will remain with the Department.

12.03.06 (revised 5-26-2015)

Bicycle Facilities

Bicycle facilities may be included on turnback projects if recommended by the Bureau of Transportation Planning Bicycle/Pedestrian Coordinator and provided the path does not itself require additional R.O.W. Generally the funding for these facilities would come from the Transportation Alternatives Program.

14.41

PARTICIPATION AGREEMENTS
(PPMS Task Description 3630)

14.41.01 (revised 5-26-2015)

General

Any questions with respect to the necessity of an agreement, cost participation, cost splits, or negotiation of terms in an agreement should be coordinated with the Governmental Coordination Unit - Development Services Division. Agreements for State trunkline highway projects are prepared by the Governmental and Railroad Coordination Unit in the following categories:

- Memos of Understanding (for activities performed by local agencies-PE, CE, ROW acquisition, etc.
- Trunkline Transportation Alternatives Program projects
- Statutory-Act 51 Participation
- Extra Width Construction and Resurfacing
- Non-trunkline Work
- Municipal Utility (betterment or relocation)
- Turn back
- Parking
- Maintenance and Operation (bike path, sound walls, pedestrian bridges, etc.)
- Michigan Institutional Roads
- Joint Storm Sewers
- Detour Route Improvements

The Governmental Coordination Unit - Development Services Division is responsible for the negotiation of terms and preparation of agreements. Contact should be made as early as possible in the plan development process to allow adequate time for the proper coordination to process an agreement.

14.41.01 (continued)

Any correspondence with a local unit of government that involves participation, whether statutory or special, should be originated by or cleared through the Governmental Coordination Unit - Development Services Division. Particular care should be used when citing cost estimates and federal participation since the agreement cost estimate figures may include higher contingency percentage and lower federal-aid participation ratios.

Information on work to be included in a contract at 100% local expense should be submitted to the Governmental Coordination Unit - Development Services Division upon request for the additional work from the local agency.

Requests for agreements should be submitted prior to scheduling an OEC Meeting or sooner, if possible. The following information should be submitted for an agreement preparation:

- Project Agreement Checklist-with any special conditions included in the project.
- Engineer's Estimate-with proper agency splits (proposal level in TRNS•PORT).

Plans should include the following:

1. Corporate limits and itemized quantity splits to be participated in by the city for Act 51 work.

2. Itemized quantity splits for any 100% local work (work not participated in with MDOT funds).

Other agreements such as, non-contract traffic signal (Operational Services), right-of-way (Development Services Division) and general road and bridge maintenance (Maintenance Services) are processed by other areas within MDOT.

7.01.04

Design Loading (8-20-2009)

The design loading is as specified in A 3.6.1.2 of AASHTO LRFD with the exception that the design tandem as specified in a.3.6.1.2.3 shall be replaced with a single 60 kip load.

A. Interstate and Trunklines (8-20-2009)

Vehicular live loading on the roadways of bridges designated HL-93 Mod, shall consist of 1.2 times the combination of the:

- Design truck or single 60 kip load
- Design lane load

Where 90% of two design trucks are combined with 90% of the effect of a lane load for both negative moment and pier reactions per A.3.6.1.3 a 1.2 multiplier shall be applied to the resulting moment or load. Each design lane under consideration shall be occupied by either the design truck or single 60 kip load, coincident with the lane load, where applicable. The loads shall be assumed to occupy 10.0 ft. transversely within a design lane.

The design truck and design lane load are specified in AASHTO LRFD A 3.6.1.2.2 and A 3.6.1.2.4.

B. Local Roads and Streets (8-20-2009)

Structures carrying local roads or streets are to be designed according to county or city standards. The minimum design load acceptable for streets or primary county roads is HL-93 Mod loading as specified in this entire section. (8-6-92)

The load modifying factor, η (eta), related to ductility, redundancy, and operational importance, shall be considered for less important roads (AASHTO LRFD A 1.3.2.1).

7.01.04 (continued)

C. Pedestrian and Bicycle (Nonmotorized) Bridges

Pedestrian and bicycle (nonmotorized) bridges shall be designed according to the current AASHTO LRFD Bridge Design Specifications A 3.6.1.6. and current edition of the Guide Specifications for Design of Pedestrian Bridges. The assumed live load is 90 LBS/SFT. Consideration shall also be given to maintenance vehicles with regard to design loadings and horizontal clearances. For Clear Bridge Width, w, greater than 10'-0", use an H10 truck. For w between 7'-0" and 10'-0", use an H5 truck. Where vehicular access is prevented by permanent physical methods (bollards, gates, etc.) or for w less than 7'-0" the bridge does not need to be designed for a maintenance vehicle.]
(8-20-2009) (11-28-2011) (5-25-2015)

D. Railroad Bridges

Railroad bridges are designed according to the current AREMA Specifications, with the Cooper loading established by the railroad company.

E. Section combined with 7.01.04 C. (5-25-2015)

F. Deck Replacement, Bridge Widening or Lengthening

When an existing deck is to be replaced or the structure is to be widened or lengthened, the proposed reconstruction should be designed according to LRFD where practicable. In cases where LRFD cannot be used, the design method shall be approved by the Bridge Structures Supervising Engineer of the Design Division. (8-20-2009) (11-28-2011)

G. Ice Force on Piers

All piers that are subjected to the dynamic or static force of ice shall be designed according to the current AASHTO LRFD Bridge Design Specifications. (8-20-2009)

8.02

TITLE SHEET

Care should be taken to see that the notes appearing on the title sheet actually apply to the work being done on the project. Most of the standard notes included in the Design Manual relate to new construction. For rehabilitation projects the wording of some of these notes must be modified. Other notes are completely inappropriate and should be deleted.

A1. The design of (this) (these) structure(s) (except the railroad overpass(es) (is) (are) based on 1.2 times the current AASHTO LRFD Bridge Design Specification HL-93 loading with the exception that the design tandem portion of the HL-93 load definition shall be replaced by a single 60 kip axle load before application of this 1.2 factor. The resulting load is designated HL-93 Mod. Live load plus dynamic load allowance deflection does not exceed (1/425*) (1/800) (1/1000**) of span length (and (1/375) (1/300) of cantilever arm). [*Wood construction.] [**Use for structures with pedestrian loads.] (8-20-2009)

A2. The design of this structure is based on current AASHTO LRFD Bridge Design Specification pedestrian loading of 90 psf (and a maintenance vehicle (H5) (H10) loading, not acting concurrently). Live load deflection does not exceed 1/360 of span length and 1/220 of cantilever arm. [Use for pedestrian bridges. For Clear Bridge Width, w, greater than 10'-0", use an H10 truck. For w between 7'-0" and 10'-0", use an H5 truck. For w less than 7'-0" the bridge does not need to be designed for a maintenance vehicle.] (11-28-2011) (5-25-2015)

A3. The design of the deck slab is based upon the strip method as defined in the current AASHTO LRFD Bridge Design Specification. (8-20-2009)

8.02 (continued)

B1. The (reconstruction) (rehabilitation) design is based on 1.2 times the current AASHTO LRFD Bridge Design Specification HL-93 loading with the exception that the design tandem portion of the HL-93 load definition shall be replaced by a single 60 kip axle load before application of this 1.2 factor. The resulting load is designated HL-93 Mod. Live load plus dynamic load allowance deflection does not exceed (1/425**) (1/800) (1/1000***) of span length (and 1/375) (1/300) of cantilever arm. The original structure was designed for _____ (and alternate military*) loading (based on AASHTO Standard Specifications for Highway Bridges). [*Used only for structures on interstate routes.] [**Wood construction.] [***Use for structures with pedestrian loads.] [See Subsection 7.01.06 for deflection limits.] (8-20-2009)

B2. The (reconstruction) (rehabilitation) design is based on the 17th Edition of AASHTO Standard Specifications for Highway Bridges (HS25) (HS20-44) (and alternate military*) loading. Live load plus impact deflection does not exceed (1/425) (1/800) (1/1000) of span length (and 1/375) (1/300) of cantilever arm. The original structure was designed for ____ (and alternate military*) loading based on AASHTO Standard Specifications for Highway Bridges. [*Use only for structures on interstate routes.] [See 17th Edition of AASHTO for deflection limits.] [Use note for Load Factor method of design.] (8-20-2009)

C Except where otherwise indicated on these plans, or in the proposal and supplemental specifications contained herein, all materials and workmanship shall be according to the Michigan Department of Transportation Standard Specifications for Construction _____ Edition.

8.05

GENERAL PLAN OF STRUCTURE SHEET

A1. The design of this structure is based on 1.2 times the current AASHTO LRFD Bridge Design Specification HL-93 loading with the exception that the design tandem portion of the HL-93 load definition shall be replaced by a single 60 kip axle load before application of this 1.2 factor. The resulting load is designated HL-93 Mod. Live load plus dynamic load allowance deflection does not exceed (1/425*) (1/800) (1/1000**) of span length (and 1/375) (1/300) of cantilever arm. [*Wood construction.] [**Use for structures with pedestrian loads.] [See Subsection 7.01.06 for deflection limits.] (8-20-2009)

A2. The design of this structure is based on current AASHTO LRFD Bridge Design Specification pedestrian loading of 90 psf (and a maintenance vehicle (H5) (H10) loading, not acting concurrently). Live load deflection does not exceed 1/360 of span length and 1/220 of cantilever arm. [Use for pedestrian bridges. For Clear Bridge Width, w, greater than 10'-0", use an H10 truck. For w between 7'-0" and 10'-0", use an H5 truck. For w less than 7'-0" the bridge does not need to be designed for a maintenance vehicle.] (11-28-2011) (5-25-2015)

A3. The design of the deck slab is based upon the strip method as defined in the current AASHTO LRFD Bridge Design Specification. (8-20-2009)

8.05 (continued)

B1. The (reconstruction) (rehabilitation) design is based on 1.2 times the current AASHTO LRFD Bridge Design Specification HL-93 loading with the exception that the design tandem portion of the HL-93 load definition shall be replaced by a single 60 kip axle load before application of this 1.2 factor. The resulting load is designated HL-93 Mod. Live load plus dynamic load allowance deflection does not exceed (1/425**) (1/800) (1/1000***) of span length (and 1/375) (1/300) of cantilever arm. The original structure was designed for ____ (and alternate military*) loading (based on AASHTO Standard Specifications for Highway Bridges). [*Used only for structures on interstate routes.] [**Wood construction.] [***Use for structures with pedestrian loads.] [See Subsection 7.01.06 for deflection limits.] [Use note for LRFD method of design.] (8-20-2009)

B2. The (reconstruction) (rehabilitation) design is based on the 17th Edition of AASHTO Standard Specifications for Highway Bridges (HS25) (HS20-44) (and alternate military*) loading. Live load plus impact deflection does not exceed (1/425) (1/800) (1/1000) of span length (and 1/375) (1/300) of cantilever arm. The original structure was designed for ____ (and alternate military*) loading based on AASHTO Standard Specifications for Highway Bridges. [*Use only for structures on interstate routes.] [See 17th Edition of AASHTO for deflection limits.] [Use note for Load Factor method of design.] (8-20-2009)